



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT JR.
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

May 25, 1999

E. NORRIS TOLSON
SECRETARY

MEMORANDUM TO: Mr. J. Douglas Galyon, Member, Board of Transportation
Mr. G. R. Kindley, Member, Board of Transportation
Mr. Dalton D. Ruffin, Member, Board of Transportation
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Mr. D. B. Waters, Division Engineer, Division 9
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Mr. M. R. Poole, P.E.
Mr. A. L. Avant (2)
Mr. J. D. Lane
Mr. T. A. Peoples, P.E.
Mr. David Smith, P.E.

FROM: David G. Modlin, Ph.D., P.E.
Head of Feasibility Studies

SUBJECT: Feasibility Study # U-2537 (Re-evaluation), High Point, High Point West Belt from I-85 to US 311, Davidson, Guilford and Randolph Counties.

Our staff has completed a feasibility study for the subject proposed project. This brief analysis suggests improvements that would be logical if the project were to be funded. A copy of our report is attached for your information.

DGM/joa

Attachment

cc: Mr. Kim L. So, P.E.



FEASIBILITY STUDY

High Point

**High Point West Belt
from I-85 to US 311**

Davidson-Guilford-Randolph Counties

Division 7, 8, 9

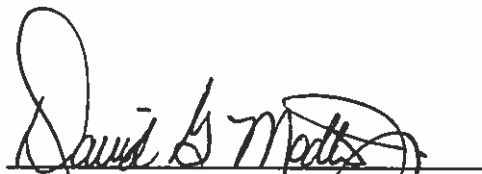
U-2537

Re-evaluation

Prepared by
Program Development Branch
Division of Highways
N. C. Department of Transportation



Kim L. So, PE
Highway Planning Engineer



David G. Modlin, Jr. PhD, PE
Head of Feasibility Studies

5/7/99

Date

FEASIBILITY STUDY

High Point West Belt from I-85 to US 311

Davidson-Guilford-Randolph Counties

U-2537

I. GENERAL DESCRIPTION

This feasibility study evaluates the potential for the construction of the High Point West Belt from I-85 at SR 1547 (Cucumber Road) to US 311 in High Point (see Figure 1). The project is approximately 10.5 miles (16.9 km) in length.

This is a re-evaluation of a previous study completed in 1996 which referred to the project as "High Point Westside Thoroughfare". However, the City of High Point desired to shift the alignment to the west and extend the northern terminus from SR 1755 (Lexington Avenue) to US 311. The alignment of the High Point West Belt shown in Figure 1 is favored by the City of High Point.

The studied typical section is a four-lane, curb and gutter section with 16-foot (4.9-m) raised median and 10-foot (3.0-m) berms on a 200-foot (61-m) wide right-of-way with no control of access.

It is anticipated that this project will require the relocation of approximately 24 residences and 1 business.

The estimated cost of the project is \$191,400,000 (\$12,000,000 for right-of-way and \$179,400,000 for construction).

This study is not a detailed planning/environmental investigation. A feasibility study presents studied cross-sections for improvements, general corridors of improvements, and estimated costs of construction and right-of-way. This study attempts to identify any potential environmental, permitting, or other observed issues that deserve consideration in the planning and construction stages.

II. NEED FOR PROJECT

This project was requested by the City of High Point. It provides a link in the development of the High Point Thoroughfare Plan. This project would provide faster access to I-85 and I-85 Business for traffic in the western part of High Point. The proposed West Belt would function primarily as a

developmental road, that is, to promote development and growth in West High Point.

Estimated design year 2025 average daily traffic (ADT) on the proposed West Belt varies from 20,000 vehicles per day (vpd) near North Main Street at the northern project terminus to 40,000 vpd near I-85 Business. In the design year 2025, the traffic volumes along the greater part of the roadway are anticipated to operate at a level of service (LOS) between B and C, and at LOS D in the section between I-85 and I-85 Business.

III. STUDIED ALTERNATE

It is proposed to construct the High Point West Belt from I-85 at SR 1547 (Cucumber Road) to US 311 in High Point (see Figure 1). The project is approximately 10.5 miles (16.9 km) in length.

The recommended typical section is a four-lane, curb and gutter section with 16-foot (4.9-m) raised median and 10-foot (3.0-m) berms on a 200-foot (61-m) wide right-of-way with no control of access. Each direction of travel would be 28 feet (8.5 m) wide face-to-face of curbs.

The project is mostly on new location except for a section which utilizes 1.0 mile (1.6 km) of existing SR 1547 (Cucumber Road) and a short section between N. Main Street and US 311. North of NC 68, the proposed roadway traverses an area with very rugged terrain as indicated by the topography in Figure 1. The frequent, extreme changes in the elevation of the natural terrain render outlining an acceptable vertical alignment very difficult. It is anticipated that a large quantity of earthwork and bridges would be needed. In this study, bridges are proposed at locations where fill exceeding 20 feet (6.1 m) may be required. The bridges would have a clear roadway width of 72 feet (21.9 m) to be consistent with the cross section of the roadway. A 5-foot (1.5-m) wide sidewalk is recommended on one side of the bridges.

The project corridor crosses two railroads. Norfolk Southern Railroad has two tracks carrying 34 trains a day at speed up to 79 mph (127 kmh), and High Point-Thomasville-Denton Railroad has one track carrying 4 trains a day at 20 mph (32 kmh). The exposure index, a product of the design year traffic and the number of trains per day, at both locations far exceeded the threshold that warrants a grade separation. It is recommended the railroad crossing at both locations be grade separated.

A new interchange on I-85 Business at the proposed West Belt will replace the existing interchange at SR 1627 (see Figure 2).

It is anticipated that this project will require the relocation of approximately 24 residences and 1 business.

The cost of the project is estimated as follows:

| | |
|------------------------|----------------------|
| Right-of-Way | \$ 12,000,000 |
| Structures | \$115,500,000 |
| Other Costs | \$ 63,900,000 |
| Total Cost | <u>\$191,400,000</u> |

A transportation benefits analysis was not completed for this project. Part of the benefits analysis process is to estimate the number of users projected for the proposed roadway who would otherwise use a particular network of existing streets to travel from the same origin to the same destination. However, the proposed roadway crosses many streets from where users could originate. Therefore there could be numerous origins and destinations, as well as many possible combinations of existing streets that users would be diverted from in favor of the proposed West Belt. Due to too many uncertainties involved, it is not possible to perform the benefits analysis for this project.

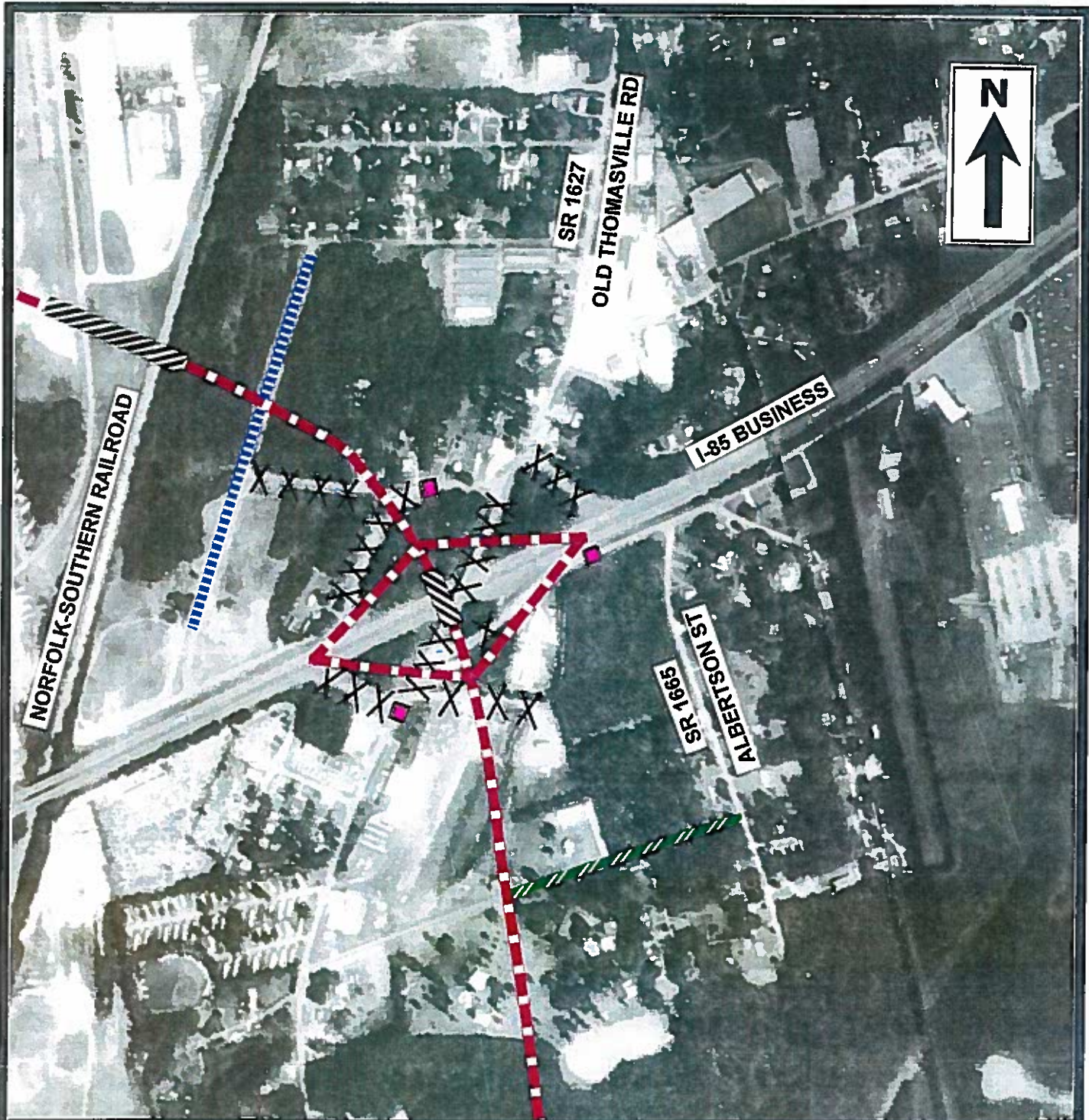
IV. OTHER COMMENTS AND CONCERNS

The project corridor crosses several creeks where wetlands might be impacted. The cost of wetland mitigation is not included in the total cost of the project.

No historical or architecturally significant sites have been identified in the project corridor.

Based on maps available at the Department of Environment, Health, and Natural Resources - Natural Heritage Section, no threatened or endangered species were identified in the project corridor.

No recommendation for bicycle accommodations was received from the NCDOT Office of Bicycle and Pedestrian Transportation.



LEGEND

- WESTBELT INTERCHANGE
- CONNECTOR ON NEW LOCATION
- RAISE THE GRADE OF EXISTING ROADWAY
- X X PAVEMENT REMOVAL
- NEW STRUCTURE
- CUL DE SAC

North Carolina Department of Transportation
Program Development Branch

U-2537

High Point West Belt

Davidson, Guilford and Randolph Counties

DIVISIONS 7, 8 & 9

FIGURE 2

